



MISSOURI DEPARTMENT OF  
**HEALTH &  
SENIOR SERVICES**

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**Healthcare-Associated Infections  
& Antimicrobial Resistance**

***Antimicrobial Stewardship Playbook  
for  
Long-Term Care Facilities***



# Antimicrobial Stewardship Playbook for LTC

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# ***What is “Antimicrobial Stewardship”?***



## What is antimicrobial stewardship?

Antimicrobial stewardship (AS) is the process for ensuring optimal antimicrobial use during patient or resident care. Optimal antimicrobial use can be assessed by using the 5 D's of AS: diagnosis, drug, dose, duration, and de-escalation.

## What is the goal of antimicrobial stewardship?

The goal of AS is not to simply decrease antimicrobial usage within a facility, but to decrease inappropriate antimicrobial use within a facility. Appropriateness of antimicrobial use is reflected in nationally published guidelines for infectious disease syndromes, as well as newly published literature that optimizes antimicrobial use while maintaining optimal patient/resident care.

## Who can perform antimicrobial stewardship?



Anyone involved in the care of the patient/resident can help perform AS:

- Nurse
- Physician
- Healthcare Provider (PA, NP, etc.)
- Infection Preventionist
- Pharmacist

However, there should be an established leader/co-leader of the AS program within a facility that helps guide efforts



# Antimicrobial Stewardship Regulations

The Centers for Medicare and Medicaid Services (CMS) have established “Conditions of Participation” for long-term care (LTC) facilities to follow if they are involved in utilizing Medicare and Medicaid programs. This can include receiving payment incentives and reimbursements for eligible services provided.

In recent years, antimicrobial stewardship has become incorporated into these conditions. CMS recognizes the impact that antimicrobial stewardship has on improving patient and resident care, as well as helping limit the public health threat of antimicrobial resistant bacteria.

## **CMS § 483.80(a) – Infection Prevention and Control Program (IPCP)**

“The facility must establish an infection prevention and control program that must include, at a minimum, the following elements:”

- 483.80(a)(1) – “A system to prevent, identify, report, investigate, and control infections and communicable diseases...”
- 483.80(a)(2) – “Written standards, policies, and procedures for the program...”
- 483.80(a)(3) – “*An antibiotic stewardship program that includes antibiotic use protocols and a system to monitor antibiotic use.*”**



# Antimicrobial Stewardship Regulations

Guidance provided by CMS lists the expectations of incorporating AS practices into a facility's IPCP and includes establishing protocols that:

- Assess residents for any infection using standardized tools/criteria
- Require indication, dose, and duration on antibiotic orders
- Specify the mode and frequency of AS education provided to prescribers and nursing staff
- Integrate regular antibiotic review into workflow
- Undergo review on at least an annual basis, and as needed

Regular antibiotic review can consist of:

- Regularly reviewing and assessing new laboratory results
- Reassessing the need for antibiotics 48 to 72 hours after initiating antibiotics
- Reassessing the need for antibiotics after a resident returns/transfers back to the facility
- Determining prescriber concordance with facility infection treatment protocols

Antibiotic usage and resistance data reports can include:

- Rate of new antibiotic starts per 1,000 resident days for specific antibiotics
- Days of antibiotic therapy per 1,000 resident days for specific antibiotics
- Summarizing bacterial culture susceptibility data over a designated timeframe (e.g., an antibiogram)
- Tracking rates of *Clostridioides difficile* infections (CDI), methicillin resistant *Staphylococcus aureus* (MRSA), carbapenem resistant Enterobacterales (CRE), or other identified resistant bacteria



# ***Antimicrobial Stewardship in Missouri Long-Term Care Facilities***



# Antimicrobial Stewardship in Missouri LTC

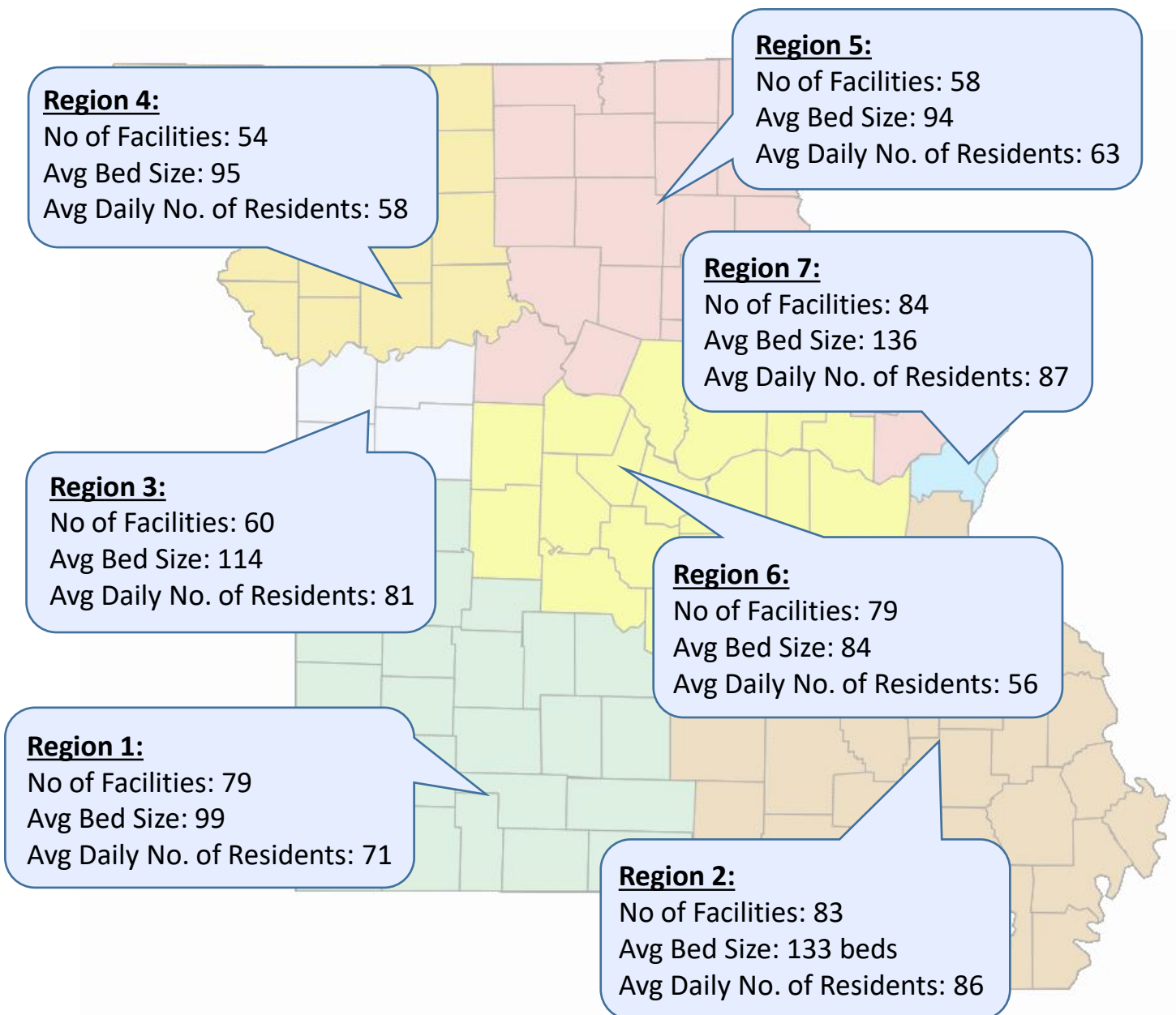
As of April 2024,

There are an average of 500 LTC facilities in Missouri that report to CMS.

The average bed-size of these LTC facilities in Missouri is 100 beds.

The average number of daily residents for LTC in Missouri is 70 residents.

LTC facilities in Missouri are divided into 7 LTC regions.







# Antimicrobial Stewardship in Missouri LTC

CMS collects and reports their measure requirements, along with each reporting facility’s performance in these measures. The following tables list a few of the CMS measures that could be linked to AS efforts in LTC.

## CMS Claims Quality Measures for LTC

Summary of October 2022 to September 2023 Data

### CMS Measures for Missouri Long-Term Care Facilities

#### Average Rate of Long-Term Residents Requiring Hospitalization

	<b><u>Missouri LTC</u></b>	<b><u>1.86</u></b>	
<b><u>National LTC</u></b> <b><u>Average</u></b>	Region 1	1.72	Hospitalizations per 1,000 Resident Days
	Region 2	1.64	
	Region 3	2.04	
	Region 4	1.64	
	Region 5	1.95	
	Region 6	1.61	
	Region 7	2.41	
<b><u>1.73</u></b>			

#### Average Rate of Long-Term Residents Requiring an Emergency Department Visit

	<b><u>Missouri LTC</u></b>	<b><u>2.09</u></b>	
<b><u>National LTC</u></b> <b><u>Average</u></b>	Region 1	1.80	ED Visits per 1,000 Resident Days
	Region 2	2.52	
	Region 3	1.96	
	Region 4	1.76	
	Region 5	2.36	
	Region 6	2.19	
	Region 7	1.90	
<b><u>1.68</u></b>			

[CMS Claims Quality Measures for LTC Data File](#)

Data accessed April 2024



# Antimicrobial Stewardship in Missouri LTC

## CMS Medicare Claims Quality Measures for LTC

Summary of Calendar Year 2023 Data

### CMS Measures for Missouri Long-Term Care Facilities

#### Percentage of Long-Term Residents Diagnosed with a Urinary Tract Infection

	<b><u>Missouri LTC</u></b>	<b><u>3.15%</u></b>
	Region 1	3.78
	Region 2	3.63
	Region 3	2.42
	Region 4	3.64
	Region 5	4.43
	Region 6	3.11
	Region 7	1.42
<b><u>National LTC</u></b>		
<b><u>Average</u></b>		
<b><u>2.14%</u></b>		

#### Percentage of Long-Term Residents with a Retained Urinary Catheter

	<b><u>Missouri LTC</u></b>	<b><u>1.46%</u></b>
	Region 1	1.17
	Region 2	1.53
	Region 3	1.08
	Region 4	1.71
	Region 5	2.06
	Region 6	1.97
	Region 7	0.86
<b><u>National LTC</u></b>		
<b><u>Average</u></b>		
<b><u>1.18%</u></b>		

[CMS Medicare Claims Quality Measure for LTC Data File](#)

Data accessed April 2024



# Antimicrobial Stewardship in Missouri LTC

## CMS Reported Inspection Deficiencies/Citations for Missouri LTC

423 Missouri LTC facilities received at least 1 citation in calendar year 2023

<u>Deficiency Category</u>	<u>No.</u>	<u>%</u>
<i>Facilities Receiving <math>\geq 1</math> Pharmacy Services Deficiency</i>	190	45

**Of these 190 facilities, citations relevant to antimicrobial stewardship efforts included:**

<i>Ensuring that residents are free from significant medication errors</i>	53 facilities
<i>Ensuring that medication error rates are not <math>\geq 5\%</math></i>	49 facilities
<i>Ensuring a licensed pharmacist performs monthly drug regimen reviews</i>	29 facilities
<i>Ensuring each resident's drug regimen are free from unnecessary drugs</i>	4 facilities

<i>Facilities Receiving <math>\geq 1</math> Infection Control Deficiency</i>	220	52
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**Of these 220 facilities, citations relevant to antimicrobial stewardship efforts included:**

<i>Utilizing policies/procedures for influenza and pneumococcal vaccinations</i>	46 facilities
<i>Implementing an antibiotic monitoring program</i>	27 facilities

[CMS LTC Inspection Health Deficiencies](#)

Data accessed April 2024



# ***CDC Core Elements of Antimicrobial Stewardship in Nursing Homes***



# Core Elements of Antimicrobial Stewardship in Nursing Homes

In 2015, the Centers for Disease Control and Prevention (CDC) established the 7 principles (“Core Elements”) for antimicrobial stewardship in the nursing home setting. The aim of these elements was to provide a target framework for establishing a successful AS program in nursing homes.

The Core Elements consist of the following:



***Leadership Commitment***



***Accountability***



***Drug Expertise***



***Action***



***Tracking***



***Reporting***



***Education***



## Core Elements of Antimicrobial Stewardship in Nursing Homes



### *Leadership Commitment*

Leadership commitment involves gaining support from facility owners and administrators for the AS program within the facility. Support can be provided as:

1. Written, signed, and/or posted statements identifying the importance of appropriate antimicrobial use while preventing antimicrobial related adverse events and antibiotic resistance
2. Including antimicrobial stewardship activities and duties in job descriptions and responsibilities, including the medical director and prescriber staff, nursing leaders, and/or pharmacy services
3. Communicating facility expectations regarding antibiotic prescribing and the enforcement of antimicrobial stewardship policies with prescribers and nursing staff
4. Promoting antimicrobial stewardship education opportunities through support of facility messaging, such as newsletters, periodic updates, etc.

[Example Policy Template](#)

[Example Commitment Poster](#)

[Example Commitment Letter](#)



## Core Elements of Antimicrobial Stewardship in Nursing Homes



### *Accountability*

Accountability involves identifying a select group of individuals that will take ownership and responsibility of the AS program, including its core efforts and outcomes. Facilities should also leverage multiple key partners to ensure the success of their program:

- Medical Director

- Nursing Director

- Infection Prevention and Control Program Coordinator

- Consultant or Partnered Pharmacist

- Consultant or Partnered Laboratory



### *Drug Expertise*

Facilities should ensure their AS program has access to drug expertise that can support efforts to review antimicrobial orders for appropriateness, including the correct dose, recommended duration, and even conditions that do not warrant antimicrobial treatment, such as asymptomatic bacteriuria.

This can be achieved through:

- Consultant or Partnered Pharmacist

- Partnered Referral Hospital/Network



# Core Elements of Antimicrobial Stewardship in Nursing Homes



## *Action*

Action in AS provides the backbone for putting established policies and procedures to work. Actions directed towards AS should focus on ensuring the “5 Ds of Antimicrobial Stewardship” are reviewed and that residents are receiving the most optimal care available.

Actions could include:

1. Implementing syndrome specific standardized treatment algorithms
  - Community-acquired pneumonia
  - Cystitis/Pyelonephritis
  - Asymptomatic Bacteriuria
  - Skin and Soft Tissue Infections
2. Performing regular drug regimen reviews
  - Ensuring the 5 D’s of antimicrobial stewardship are met
  - Limiting unnecessary medications
  - Preventing possible medication errors and adverse events

[Example Allergy Assessment Tool](#)  
[Loeb Minimum Criteria Reference Sheet](#)  
[Updated Beer’s Criteria Reference Sheet](#)





# Core Elements of Antimicrobial Stewardship in Nursing Homes



## *Action*

### 3. Establishing standardized communication tools

Situation, Background, Assessment, Recommendation (SBAR) Tool

Examples:

[Clostridioides difficile SBAR](#)

[Lower Respiratory Tract Infection SBAR](#)

[Skin/Soft Tissue Infection SBAR](#)

[Urinary Tract Infection SBAR](#)

Inter-Facility Transfer Tool

Example:

[Inter-Facility Transfer Tool](#)

### 4. Conducting a “time-out” assessment 48-72 hours after initiating antibiotics

Conducting a review 48-72 hours after a patient or resident is started on antibiotics to reassess new information and laboratory results. This ensures that the currently prescribed antibiotics are appropriate and do not need to be adjusted or to verify that antibiotics are still warranted.



## Core Elements of Antimicrobial Stewardship in Nursing Homes



### *Tracking*

A facility should ensure that they are monitoring AS activities being performed by tracking/documenting them. Activities that can be tracked range from new antimicrobial orders initiated, acceptance rates of recommendations made to prescribers, number of adverse events related to antimicrobial use, and/or rates of targeted infections within the facilities, such as *Clostridioides difficile* infections (CDI).

[Example Antibiotic Tracking Tool](#)

[Example McGeer Criteria Tool](#)



### *Reporting*

It is important that any activities tracked should be reported out to their respective parties. Activity summaries and antimicrobial utilization data should be shared with facility administration, facility prescribers, and first-line staff. This allows all care staff and members to be knowledgeable in AS efforts going on within the facility. This can also increase collaboration and buy-in within the facility that can drive potential policy and procedural refinements regarding optimizing antimicrobial use.

[Example Utilization Report](#)



## Core Elements of Antimicrobial Stewardship in Nursing Homes



### *Education*

Staying up to date with current medical practice is key in providing care to residents. Providing AS targeted education can help re-emphasize facility AS priorities, re-enforce goals of current procedures, and familiarize facility staff with new AS initiatives from a local, state, and/or federal level. Education could also be targeted to residents and their families as a method of explanation on why certain practices are in place and/or to provide expectations while the resident is on antimicrobial therapy.

Education could be provided as structured meetings/workshops, flyers, pamphlets, or newsletters. Whichever education opportunities are chosen, it should be provided to the targeted audience at regular intervals. Competency-based learning/education opportunities should be considered, if possible.



# ***Example Antimicrobial Stewardship Tools for LTC***



## Example Antimicrobial Stewardship Documents

Antimicrobial Stewardship Policy Template	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
Antimicrobial Stewardship Gap Analysis Tool	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
Antimicrobial Stewardship Facility Administration Commitment Poster	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
Antimicrobial Stewardship Facility Administration Commitment Letter	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
Antimicrobial Use Foundational Tracking Tool Template	<a href="#">(Excel)</a>
Antimicrobial Use Comprehensive Tracking Tool Template	<a href="#">(Excel)</a>
Antimicrobial Utilization Report Template	<a href="#">(Word)</a>
Inter-facility ASP/IP Transfer Form	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
Updated McGeer Criteria for Tracking Infections	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
SBAR - <i>Clostridioides difficile</i> Infection (CDI)	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
SBAR - Lower Respiratory Tract Infection (LRTI)	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
SBAR - Skin/Soft Tissue Infection (SSTI)	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
SBAR - Urinary Tract Infection (UTI)	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
Resident Drug Allergy Assessment Tool Template	<a href="#">(Word)</a> / <a href="#">(PDF)</a>
Common Oral Antibiotic Spectrum Reference	<a href="#">(PDF)</a>
Loeb Minimum Criteria for Initiation of Antibiotics Reference	<a href="#">(PDF)</a>
Updated Beers Criteria for Potentially Inappropriate Use – Antibiotics	<a href="#">(PDF)</a>



# ***Additional Antimicrobial Stewardship Resources for LTC***



## Helpful Resources

[CMS Nursing Home Quality Improvement](#)

[CMS MDS Quality Measures for LTC Data File](#)

[CMS Medicare Claims Quality Measure for LTC Data File](#)

[CMS LTC Inspection Health Deficiencies](#)

[HQIN Long-Term Care Antibiotic Stewardship Resources](#)

[TMF Networks Antibiotic Stewardship in Long-Term Care](#)

[TMF Networks Long-Term Care Antibiotic Podcast Series](#)

[American Geriatric Society 2023 Updated Beers Criteria](#)

[AHRQ Nursing Home Antimicrobial Stewardship Guide](#)

[AHRQ Nursing Home Antibioqram Toolkit](#)

[CMS/AHRQ Antimicrobial Stewardship Program Resources for Nursing Homes](#)

[CDC Antibiotic Stewardship Course](#)

[CDC Nursing Home Infection Preventionist Course](#)

[Missouri DHSS - Nursing Homes and Other Care Options](#)

[Missouri DHSS - Healthcare-Associated Infections/Antimicrobial Resistance](#)

[Missouri DHSS - Antibiotic Stewardship Program](#)



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